WHAT IS CLAIMED IS:

1. A vaccine composition against infection of *M. haemolytica* in cattle comprising an effective immunizing amount of at least one immunogen selected from the group consisting of (i) recombinant PlpE outer membrane protein of *M. haemolytica*, (ii) an antigenic subunit of thereof, and (iii) recombinant PlpE outer membrane protein of *M. haemolytica* or antigenic subunits thereof in combination with at least one other antigen against *M. haemolytica*, and further comprising a pharmaceutically acceptable carrier or diluent.

2. The composition according to claim 1, wherein said carrier is an adjuvant.

3. The composition according to claim 1, wherein said recombinant PlpE outer membrane protein of *M. haemolytica* comprises the polypeptide of SEQ ID NO: 2.

4. The composition according to claim 3, wherein said subunits are selected from the group consisting of the polypeptides of SEQ ID NOS: 11-18.

5. The composition of claim 1, wherein the subunit comprises the polypeptide of SEQ ID NO: 12.

6. A method for inducing an immune response in cattle to provide immune protection against BRD and/or shipping fever, comprising administering to an at-risk bovine an effective amount of the vaccine composition of claim 1.

7. The method according to claim 6, wherein the amount of vaccine composition includes between 10-100 μg of recombinant PlpE outer membrane protein of *M. haemolytica* or antigenic subunits of thereof.

8. The method according to claim 7, wherein the amount of vaccine composition includes about 100 μg of recombinant PlpE outer membrane protein of *M. haemolytica* or antigenic subunits of thereof.